

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Udo Becker et al.	Art Unit	: Unknown
Serial No.	: New U.S. National Phase	Examiner	: Unknown
Filed	: June 5, 2006		
Title	: INTRINSICALLY SAFE DATA TRANSMISSION DEVICE		

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

PRELIMINARY AMENDMENT

Prior to examination, please amend the application as indicated on the following pages.

**Amendment to the Claims** are reflected on in the listing of claims which begins on page 2 of this paper.

**Remarks/Arguments** begin on page 5 of this paper.

## Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application.

### Listing of Claims

1. (Currently Amended) A data [[Data]] transmission device [[(5)]] with at least one data adaptation device [[(6)]] and one data distributing device [[(7)]], which device is connected between at least one process control computer [[(2)]] and field units [[(4)]] connected thereto via a bus system [[(3)]], wherein the process control computer [[(2)]] and field units [[(4)]] are parts of a process control system [[(1)]] and the data transmission device [[(5)]] is, in particular, intrinsically safe, ~~characterised in that~~ wherein the data adaptation device [[(6)]] and the supply devices [[(8)]] assigned thereto are formed so that they are explosion-proof and each supply device [[(8)]] is connected to the data distributing devices [[(7)]] via an explosion-proof line, wherein either this or the field units [[(4, 17, 18)]] connected thereto have a barrier device [[(10, 11)]] for limiting the applied power.
2. (Currently Amended) The data [[Data]] transmission device according to claim [[Claim]] 1, ~~characterised in that~~ wherein the data adaptation devices [[(6)]] and / or supply devices [[(8)]] can be mounted on a backwall plate ~~that (28), which~~ has a field bus [[(23)]] for communication among the devices [[(6, 8)]] and with the process control computer [[(2)]].
3. (Currently Amended) The data [[Data]] transmission device according to claim [[Claim]] 1, ~~or 2, characterised in that~~ wherein the data adaptation device [[(6)]] has a data matching and / or data converting circuit.
4. (Currently Amended) The data [[Data]] transmission device according to claim 1, at least one of the preceding Claims, characterised in that wherein the data adaptation devices [[(6)]] and / or supply devices [[(8)]] are encapsulated in an explosion-proof manner.
5. (Currently Amended) The data [[Data]] transmission device according to claim 1, at least one

~~of the preceding Claims, characterised in that wherein~~ the supply device [[(8)]] has at least one output [[(12)]] with extended safety (Ex-e).

6. (Currently Amended) The data [[Data]] transmission device according to claim 1, ~~at least one of the preceding Claims, characterised in that wherein~~ the data distributing device [[(7)]] and / or field unit [[(4, 17, 18)]] is formed for intrinsically safe (Ex-i) signal matching.
7. (Currently Amended) The data [[Data]] transmission device according to claim 1, ~~at least one of the preceding Claims, characterised in that wherein~~ the barrier device [[(10, 11)]] is integrated in the field unit [[(4, 17, 18)]] or in the data distributing device [[(7)]].
8. (Currently Amended) The data [[Data]] transmission device according to claim 1, ~~at least one of the preceding Claims, characterised in that wherein~~ the barrier device [[(10, 11)]] is a safety barrier with Zener diodes and / or resistors and / or fuses.
9. (Currently Amended) The data [[Data]] transmission device according to claim 1, ~~at least one of the preceding Claims, characterised in that wherein~~ the data distributing device [[(7)]] and field unit [[(4, 17, 18)]] are connected by means of connection lines [[(13)]] rated as intrinsically safe (Ex-i) or having extended safety (Ex-e).
10. (Currently Amended) The data [[Data]] transmission device according to claim 1, ~~at least one of the preceding Claims, characterised in that wherein~~ the data distributing device [[(7)]] is a junction box [[(14)]].
11. (Currently Amended) The data [[Data]] transmission device according to claim 1, ~~at least one of the preceding Claims, characterised in that wherein~~ the bus system [[(3)]] between the process control computer [[(2)]] and backwall plate or bus interface module [[(15)]] on the backwall plate is a Profibus or the like.
12. (Currently Amended) The data [[Data]] transmission device according to claim 1, ~~at least one of the preceding Claims, characterised in that wherein~~ I/O signal matching modules [[(16)]]

can be mounted on the backwall plate.

13. (Currently Amended) The data [[Data]] transmission device according to claim 1, ~~at least one of the preceding Claims, characterised in that~~ wherein the field units [[[4, 17, 18)]] are sensors and / or actuators.
14. (Currently Amended) The data [[Data]] transmission device according to claim 1, ~~at least one of the preceding Claims, characterised in that~~ wherein the process control computer [[[2)]] is connected to a server [[[20)]] via a high-speed data transmission device [[[19)]]].
15. (Currently Amended) The data [[Data]] transmission device according to claim 1, ~~at least one of the preceding Claims, characterised in that~~ wherein the server [[[20)]] is connected to an input device [[[21, 22)]] for, at least, maintenance and modification of the process control system [[[1)]]].
16. (Currently Amended) The data [[Data]] transmission device according to claim 1, ~~at least one of the preceding Claims, characterised in that~~ wherein the data adaptation device [[[6)]] is connected directly to the process control computer [[[2)]]].

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REMARKS


Claims 1-16 are pending with claim 1 being independent. The claims have been amended to eliminate multiple dependencies and to place the claims in better form for examination. No new matter has been introduced.

Applicant asks that all claims be examined in view of the amendment to the claims.

Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 6/5/06

  
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John F. Hayden  
Reg. No. 37,640

Fish & Richardson P.C.  
P.O. Box 1022  
Minneapolis, MN 55440-1002  
Telephone: (202) 783-5070  
Facsimile: (202) 783-2331